

# THE STORY OF GRAFLEX





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*As told to Al Sisson by Members of the  
Graflex Organization*



*A Quarter Century of Progress from  
June 9, 1926 to June 9, 1951*





**"SOUTH DAKOTA LANDSCAPE" by Lincoln Borglum.**  
Another Speed Graphic Prize-Winning picture.

Graflex, Inc., ROCHESTER 8, NEW YORK, U. S. A.

*Eastern Service Office, 50 Rockefeller Plaza, New York 20, New York*

*Western Division, 800 North Cole Avenue, Hollywood 38, California*

*Photometric Limited, 137 Wellington Street, West, Toronto, Canada*

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# GRAFLEX, INC.

PHOTOGRAPHIC EQUIPMENT SINCE 1890

ROCHESTER 3



NEW YORK, U.S.A.

*To the Members and Friends  
of Graflex, Inc.:*

On June 9th, 1926, Graflex, Inc. (then the Folmer Graflex Corporation), came into corporate being and on June 9th, 1951, the company is observing its Twenty-fifth Anniversary.

This booklet is now published by Graflex, Inc., as an appreciation of the support which it has enjoyed because of you, whether you be a Graflex Member, a Graflex Dealer, a Graflex User, or a Graflex Stockholder.

Character and dependability, we have enjoyed from you, and we have sought to return the same in full measure.

These traditions afford our aims for the future.

We thank each one and all of you.

*J. C. Whitaker*

PRESIDENT

*N. R. Whitaker*

CHAIRMAN



**William F. Folmer, Inventor of the Graflex Camera**

## *From the Beginning*

**T**HIS is the story of Graflex, a company which is the outgrowth of a number of small concerns dating back to about the turn of the century.

The Folmer & Schwing Manufacturing Company was incorporated on April 10, 1890, by William F. Folmer and William E. Schwing, partners, in New York City, who were manufacturing and selling cameras in a limited way.

The early years of the present century gave forth a greatly increased interest in photography, and particularly in new and improved sensitized materials and in newly developed photographic cameras. The great Eastman Kodak Company was a forerunner in this era and Rochester was the principal seat of the activity. The Rochester Optical Company, the Century Camera Company, the Rochester Panoram Camera Company were among those that came into being at that time and these three in due course were acquired by the Eastman Kodak Company.

In the meantime the Folmer & Schwing Manufacturing Company, with Mr. Folmer as the guiding spirit, was making progress in its development in New York City. In 1905 this company was purchased by Kodak and moved to Rochester in April of that year.

In 1917 the Folmer-Century Division of the Eastman Kodak Company occupied a portion of what is now the main plant of Graflex, Inc., at the intersection of Caledonia Avenue (now Clarissa Street) and the Erie Canal (now Broad Street). Mr. Folmer became General Manager and continued as such until 1926 when the Folmer Graflex Corporation, having acquired the Folmer-Century Division of Eastman Kodak Company, began business as a new corporation with William F. Folmer as President and General Manager. He continued in this capacity for only a short time when he was required to relinquish his responsibilities because of ill health.

In late 1928, Nelson L. Whitaker became President and General Manager of the company and continued in these capacities until May, 1949, when he was elected Chairman of the Board, and his son, Gaylord C.

Whitaker, then a Vice-President, was elected President and General Manager.

During the year 1929 the business of the new company gained momentum, and under the new management its roots were being put down into the soil of security, and very fortunately, for the depression of the early thirties was taking form by late 1929. This continued for three or four years during which the production of the whole country sank to low ebb. The affairs of Graflex took this general pattern, and it is interesting to note that the sales of the company for the entire year 1932 were equivalent to the sales for one average half month in 1950.

During this period, through forward planning, the financial position of the company was strengthened and the future given assurance through the development of new and improved products.

Active in the management with Mr. Whitaker in those days were Clarence H. Harper, soon to become Vice-President and Treasurer, and Charles H. Roth, Sr., then Superintendent, later Factory Manager. Mr. Roth, after carrying on in this capacity through World War II, resigned his position and has since been with Graflex in a consulting capacity.

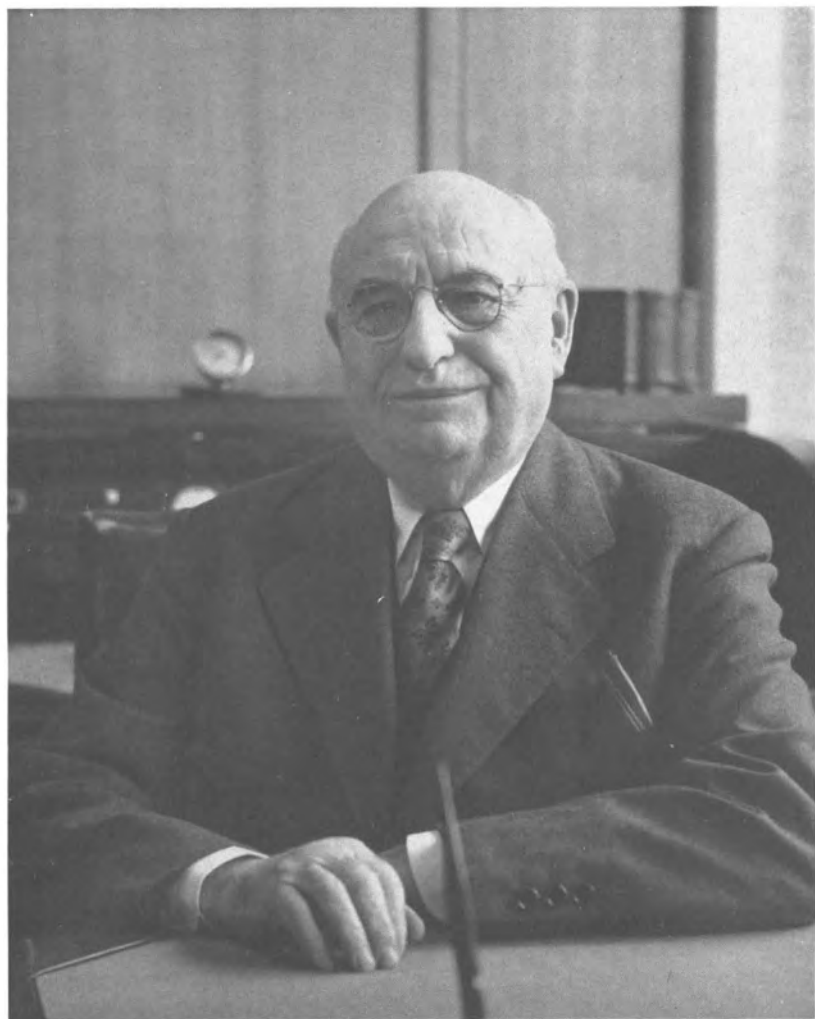
During the depression years Gaylord C. Whitaker, now President and General Manager, and Howard A. Schumacher, now a Vice-President, entered the employ of the company.

### ***Family Spirit Made Company Strong***

In those days of limited business and consequent limited income, when there averaged less than 100 men and women on the payroll as compared with approximately 800 at the time of this publication in 1951, opportunity was afforded for a close relationship between management and all on the payroll. All worked together in a sort of family relationship for the benefit of one another, the sense of employer and employee passed from the picture, and, from that day on, all on the payroll have been "Members of the Graflex Organization." This was a conception of the management of that day as it is today—an association of all for one and one for all, which is firmly implanted in the philosophy of Graflex.

Inevitably, continuity of family associations with Graflex (upon occasion three generations on the payroll at the same time, and the many instances of father and son, mother and daughter, husband and wife employment) are traditional and contribute in large measure to the recognized "Spirit of Graflex," expressed as it is in happy relations, high-quality workmanship, improved products, and the resultant benefits reflected to both company and Members.





Nelson L. Whitaker, Chairman

As an outgrowth of this spirit came the birth of the Graflex Recreation Club in 1935. In those days the present cafeteria in the Clarissa Street plant was an unused section of Building No. 3. Members, both men and women, worked long volunteer hours and with the assistance of funds from the company created the Clubroom which now serves as such as well as a cafeteria. This work of heart and hand by all concerned was guided in large measure by Art Mildahn, who was the first president of the G.R.C. and who was re-elected to that position for 12 successive years, when he declined re-election, and thereupon was elected Chairman of the G.R.C. Board of Directors, a position which he holds to this day.

The program of the G.R.C. has through the years embraced social, recreational, athletic, and educational activities, all of which has meant that there is more for the Members than a mere job at Graflex. The expenses of operating the Club are assumed jointly through nominal dues from the Members and by payments by Graflex.

### ***Co-operative Endeavor—High Morale***

Graflex, having attained by 1937 a solid and dependable financial position, put into effect practices as to Member benefits that form the basis of the present liberal benefits that are now enjoyed by the Members of the Graflex Organization.

These benefits include holidays and vacations with pay, group life insurance, year-end wage and salary dividend, pensions to retired Members whose advanced age precluded their inclusion in a retirement plan, and free parking facilities. Also group Accident and Health insurance and the Graflex Retirement Income and Life Insurance Plan, a retirement plan of which the Security Trust Company of Rochester is trustee, and which now has investments and cash values of life insurance underlying it in the amount of approximately \$1,090,000, on a contributory basis. Hospital Benefits and Surgical Care are also available.

The Graflex Annuity Club was formed in 1940 and is composed of all in the Graflex Retirement Income and Life Insurance Plan. The Club annually elects its officers and representatives on the Graflex Retirement Committee, which has jurisdiction over the administration of the Plan. In addition the social activities of the Club include a dinner held annually at which new members under the Plan are welcomed and receive their Annuity membership pins.

The Graflex Fund for Charitable Purposes is a charitable trust formed in 1941 under New York State Law, and is the outgrowth of a unique plan, under which, beginning in 1939, contributions were made jointly



Gaylord C. Whitaker, President

by Members of the Graflex Organization and the company to the Rochester Community Chest and other worthy causes. The now existing Trust resulted from a desire on the part of Members to extend these benevolences beyond that single objective. Contributions by the Members to this Trust are made in hours worked on designated Saturdays for which the participating Members receive pay at time and one-half, and the net amount of dollars accruing to the Members is then paid into the Fund. Graflex makes its contribution in cash. The Trust is administered by three trustees representing the company and the Members. Through it a control over frequent solicitations has been established and many inequities done away with. This Fund has attracted country-wide attention and commendation.

In 1939 the growth of the business was evidenced when a service office was opened in New York City at 50 Rockefeller Plaza, to handle the needs of the dealers and customers in that area. This operation in expanded space continues at the same address.

The Western Division at 3045 Wilshire Boulevard, Los Angeles, California, was established in 1941 when the growing acceptance of Graflex-built cameras and photographic equipment made a West Coast location necessary for the distribution and servicing of Graflex products in the eleven Western States.

Due to the requirements of the Western Division for additional space, and changed zoning conditions, Graflex in October, 1950, purchased a plot of ground at 800 North Cole Avenue in Hollywood upon which it has erected and now occupies a handsome brick structure, which houses its West Coast operations in manufacture, distribution, and service.

On June 13, 1945, the company changed its corporate name from the Folmer Graflex Corporation to Graflex, Inc., to conform to popular usage.

The St. James Street plant was acquired in 1947 to provide needed additional space for the manufacture of Graflex products. The existing brick, sprinklered buildings were then expanded by new construction for these purposes and for warehousing facilities. This plant has recently been again enlarged by the erection of another new building, sprinklered, air conditioned, dust- and humidity-controlled and particularly adapted to the requirements of manufacture of exacting equipment for the military. This building also houses a new, modern cafeteria.

Graflex broadened its service to the Canadian users of its equipment in 1949 through the purchase of Photometric Limited of Toronto, Canada. This company, now a wholly owned subsidiary, affords con-



venience to the photographically inclined public of Canada generally, and to Canadian owners of Graflex products specifically.

The Graflex Research and Engineering Department has grown from a handful of inventive mechanics to its present membership of over 60 skilled engineers and technicians with experience and highly developed skills in many of the technical fields, including photography, kinematics, physics, mechanical engineering, electrical engineering, electronics, optics, metallurgy, plastics, and other specialized fields. It has grown and kept pace with the ever-increasing intricacies of modern manufacture until today it is comprised of the following sections: Research, Development Engineering, Drafting, Instrument Shop, Testing, Production Engineering, and Technical Data.

The growth of the Methods Department parallels that of the Engineering Department. This Department designs, procures, and maintains all production tools and, through method sheets issued for each drawing, plans and designates the exact sequence of manufacture of each part.

No product is better than the skills, facilities, and machinery available for its manufacture. Graflex is constantly striving to improve the quality and precision of its products, and, at the same time, achieve greater efficiency of operation. Within the more than 150,000 square feet of modern manufacturing area, expert toolmakers, machinists, screw machine operators, press operators, and many other skilled artisans are aided by a balanced blending of general-purpose machinery with special-purpose machinery upon which are produced parts of highest precision. Included in this latter group are jig borers, thread grinders, internal, external, centerless, and surface grinders, horizontal boring machines, broaches, engravers, profilers and gear shapers, hobbers and shavers.

The extensive Wood Working Departments have machinery and installations enabling the attainment of finest precision workmanship so necessary to the product performance.

The Finishing and Plating Departments have facilities for producing nearly every form of high-quality finish in general commercial use today, including anodizing of aluminum, chrome and nickel plating, and elaborate painting and lacquering facilities.

The Assembly and Covering Departments, both staffed with highest skills, are equipped and arranged for the orderly progression of the work. These Departments bring together in final form the precision parts and components which ultimately complete the finished products that justify the Graflex reputation.

Through the Planning and Scheduling Department, the forward planning of management is effected from the point of requirements for ma-

terials and components, through the schedules of manufacture, to finished goods and, finally, shipping.

A well-staffed Purchasing Department is responsible for all purchases.

The Inspection Department constantly assists the production departments in control of quality and thus assures adherence to engineering drawings and specifications. Here is found every appropriate type of measuring instrument from the master blocks and optical flats whose accuracy in millionths of an inch are periodically certified by the United States Bureau of Standards, through the numerous general-purpose gauging instruments and including thousands of single-purpose plug, thread, and ring gauges.

Plants and properties have as their custodians, responsible for upkeep and good working conditions, a well-staffed force of maintenance mechanics.

The Personnel Department is responsible for the administration of personnel relations. Under the direction thereof are employment, job evaluation and merit rating, wage standards in which it co-operates with the Standards Department, safety and health, the suggestion plan, the house organ "Grafols," the cafeterias, and numerous matters having to do with the continued well-being of the Members.

### ***Graflex Products Sold, Known, and Used Around the World***

In this country, most Graflex products are sold by carefully trained technical representatives through approximately 3,500 retail photographic outlets and are distributed through every important market area from coast to coast. In addition to meeting the company's standards as to credit, stock, sales volume, store location, and population dispersment, an Authorized Graflex Dealer must be able to provide his customers with photographic aid and information through trained personnel. Net price schedules follow usual trade practices and the company operates under a Fair Trade Agreement in all states permitting one.

The Graflex Export Department sells to approximately 350 government, distributor, and retail accounts in 55 foreign countries and is steadily increasing its sales volume as fast as international currency problems permit. The world-wide use of Graflex products by the Allied Forces has created a strong preference for them in many areas formerly dominated by European brands. This department is largely responsible for the operation of Photometric Limited in Canada.

Graflex Field Technicians are assigned the responsibility of Graflex services to the Army and Navy establishments in the United States. Their services embrace, among other things, instruction of military

personnel in both the use and care of their Graflex-made equipment.

Through its retail outlets, Graflex serves a number of distinct levels or classifications of customers, each with its special needs and interests. For promotion purposes these groups are broken down as follows: press photographers, professional and "studio" photographers, functional (including industrial, business, scientific) photographers, and amateur hobbyists.

### ***Speed Graphic Famous as Standard American Press Camera***

The use of the Speed Graphic as the standard press camera has in itself provided Graflex invaluable promotion. Since the inception of picture newspapers and magazines, press photographers have made all America photography-conscious. And amateurs and professionals alike have adopted the Speed Graphic, knowing that the press photographers' "beat" is an unusually thorough proving ground for the versatility and durability of the camera.

The needs of press photographers for top-quality equipment constantly ready for top-notch performance under all conceivable operating conditions pose a special public relations problem. This has been met by Graflex through specially trained press representatives who work constantly in the field with their customers and serve as general liaison between newspapers and Graflex. Their work is augmented and encouraged by special efforts such as the Graflex Photo Contests and Graflex Diamond Awards which single out individual press photographers and their work for special personal recognition. A Photo Journalism Department staffed by specially trained representatives has been developed to help this group with their problems. The success and recognition this department has received from the press are evident by the Sprague Memorial Award which the National Press Photographers Association created in memory of Joseph Sprague, a former Director of the Graflex Photo Journalism Department.

Several special activities are worth detailing here because in many ways they are unique in the industry.

1. The annual Graflex Photo Contest offers thousands of dollars in prizes for outstanding photographs made by amateur and professional cameramen using Graflex-made equipment. This competition draws thousands of entries from all parts of the world and stimulates considerable goodwill among owners of the company's equipment.

2. A syndicated weekly newspaper camera column written by the Graflex Photo Director appears in hundreds of daily and better weekly newspapers across the country to teach beginners the rudiments of

photography in simple nontechnical language. It also serves as an additional showcase for the contest prize pictures. This column, entitled "Camera Topics," has been hailed by many editors as one of the finest features available to them for presentation to their readers.

3. Graflex also operates a Technical Service Department which any customer may consult by mail, telephone, or in person for advice on photographic problems. This department in Rochester is augmented by experienced personnel in the Graflex Service Centers in New York City, Hollywood, and Toronto, Canada.

4. All Graflex field personnel are equipped with illustrated lectures on a broad variety of different photographic subjects which are given upon invitation before camera clubs, dealers' customers groups, and other interested organizations.

5. The company provides a series of one-man photographic exhibits by leading professional cameramen, which tour the country on a scheduled basis similar to that of the contest exhibitions.

6. While common to other businesses, advertising on a national scale is carried out in both photographic magazines and magazines and newspapers of general circulation. The copy and illustrations used in these media as well as in Graflex catalogues and literature are informative as well as interesting, and, as such, perform a service not only for Graflex and its customers, but for photography as a whole.

7. Since the beginning of Graflex, the concept of service has been paramount—and the Service Sales Departments at Rochester; Hollywood, California; New York City; and Toronto (Photometric Limited) have loyally followed this tradition. Camera repairs and adjustments, fitting of new Graflex accessories—and the follow-up work of keeping the users of Graflex equipment happy with the operation of their cameras—are the jobs which the Service Sales Department accomplishes. In addition, the Rochester and Hollywood Departments make their facilities available for training of military and civilian governmental employees in the maintenance, operation, and repair of Graflex-manufactured products—a service much appreciated and utilized by governmental agencies.

In addition to these consumer presentations, Graflex maintains a continuing study of owners of its products. Mail surveys and personal interviews are used to analyze the market by regions, age, income, and other factors which can help determine future marketing policies. These surveys also provide information about customers' photographic needs, trends in thinking about photo equipment, and other data which simplify long-range development and production planning.





**Main Offices and Plant, Clarissa Street, Rochester, N. Y.**



**St. James Street Plant, Rochester, N. Y.**



**Western Division, 800 Cole Avenue, Hollywood, Calif.**

## *Graflex Products*

"GRAFLEX" or "GGRAPHIC" on a piece of photographic equipment has always stood for that which would do the job best. Leadership through performance. Improvements through experience. Progress.

"Made by Graflex" has always stood for that which could be relied upon in the emergency as well as during the normal course of use. Even the models that existed at the turn of the century were the choice of the discriminating worker whose only criterion was the best. Logically, as the years went on, Graflex products became the mainstay of those whose livelihood of photography not only demanded top performance under ideal conditions, but reliability in the emergency. The amateur of today has also joined these ranks of those who know that there can be no compromise with proven quality.

Shortly after the turn of the century, Graflex predecessors had graduated from the theory into the practical production of cameras for stereo photography, the first reliable focal plane shutters, and a line of single lens reflex cameras. Circuit cameras, the forerunner of the Air Forces' justly famed "Strip" cameras of the late 1940's, followed in 1906. In 1909, the small No. "0" Graphic led to the now popular miniature field.

The press of America stands without peer in the entire world when it comes to the reliance placed upon photography in reporting the daily story. Nowhere are the demands upon the reporting photographer so severe. Graflex can take just pride in the knowledge that this rise in the importance of pictures to the press has been hand in hand with the adoption of the Speed Graphic cameras by this fraternity; and that their undisputed position of leadership in this field has only been the result of unfailing devotion to the cause of those men whose livelihood depends upon the proper functioning of the company's products.

Today's Graphic cameras, represented by the Pacemaker Speed Graphic and Crown Graphic and the lower-priced Century Graphic, are the time-proven development of the "hand" cameras of 1898. In 1912 the focal plane shutter, which had been available previously as an acces-

sory to attach to the back of a Graphic, became an integral part of the first Speed Graphic camera offering a wide range of shutter speeds up to 1/1000 of a second. The reliability of this focal plane shutter has been ranked with color film and the Automatic Diaphragm as one of the major triumphs of the photographic industry.

With the rapid growth of photography to illustrate newspapers and magazines, the Speed Graphic filled an important need because of its ruggedness, portability, ease of operation, and other features which ideally solved the problems of the press photographer. By 1928, the Speed Graphic had almost completely supplanted European cameras and the large Graflex as the standard American camera in use by the press. Constant improvement in the Graphic camera has caused it to remain pre-eminent in this field.

Today's Crown Graphic is in all respects similar to the Speed Graphic except that it does not have a focal plane shutter. This camera enjoys a wide sale to both amateur and professional photographers who do not require the fast action-stopping versatility of the Speed Graphic. The Speed and Crown Graphics are available in sizes using  $2\frac{1}{4}\times3\frac{1}{4}$ ,  $3\frac{1}{4}\times4\frac{1}{4}$ , and  $4\times5$  film.

The Century Graphic ( $2\frac{1}{4}\times3\frac{1}{4}$ ) was introduced in 1949 in answer to the demand for a lower-priced press-type camera for amateurs, and as a second camera for professionals who prefer a smaller negative size for color. It has most of the features found in the  $2\frac{1}{4}\times3\frac{1}{4}$  Crown Graphic.

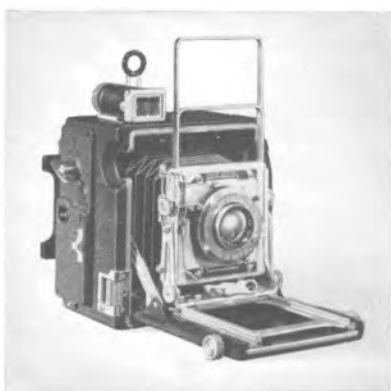
### ***Graflex Products Pre-eminent in Many Fields***

Since the beginning of time, man has worked and lived under innumerable limitations, the photographer being no exception. Some are restrained by the investment which they feel justified in making in the equipment they would like to have. Others must work under limitations of size and weight. Still others must use equipment which is subjected to the unusual demands of extreme temperature, humidity, fungus attack, and long periods of operation in regions where even a minimum of service is not available. But, with or without restriction, Graflex products are unique in the reliance which has been placed upon them by those *who must bring back the picture*. Whether this work has taken Speed Graphics into the tropical jungles under combat conditions, Graflex Super D's into the Antarctic ice caps with naval survey teams, Photorecord Microfilm cameras into scientific and law enforcement laboratories, or X-ray film holders into the laboratories pursuing the atom, success in meeting these exacting requirements is evidenced by the ever-increasing demand which grows from such experience.

*Graflex Cameras  
and  
Accessories*



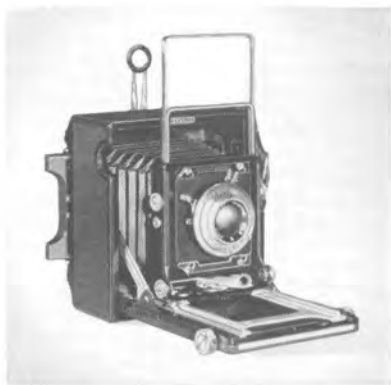
**Grafmatic Film Holder**



**Pacemaker Speed Graphic**



**Pacemaker Crown Graphic**



**Century Graphic**



**Super D Graflex**





**Graflex Photorecord**



**Graphic View II**



**Graflite Flash**



**Graflex Roll Film Holder**



**Graflarger Back**

The Graflex camera was developed in 1901 as an answer to a problem that arose with the development of faster film and increased interest in action photography. Many photographers preferred to compose and focus their pictures on ground glass, but neither a view camera nor a Graphic enabled them to watch the image right up to the moment of exposure. Experience, which involved the bugaboos of parallax and mismatched objectives with twin lens cameras of those days, led to the development of the single lens reflex camera with the automatically released focal plane shutter. The later addition of an exclusive Graflex feature, the Automatic Diaphragm, has enabled the photographer to preset his lens aperture at an "f stop" for the exposure of the picture while focusing with the lens "wide open" until the instant of tripping the shutter. Made in different sizes and models, those with Automatic Diaphragm known as Super D, the Graflex is used extensively for portraiture and child photography, fashion, pictorial, industrial, scientific work, and sports. One version of the Graflex is the basis for the familiar newspaper photographer's "Big Bertha," a camera with extra long focal length lens, up to 60 inches, which permits close-up pictures to be made from a great distance.

### ***New Developments Keep Pace with Photographers' Needs***

To satisfy the demands of professional and commercial photographers requiring 11x14, 8x10, and then 5x7 cameras for their portraiture and industrial work, Graflex produced the Century line of cameras which among others has continued to be the backbone of this type of photography. Recognizing the trend toward, and possibilities of, smaller negative sizes, Graflex in 1940 led again with the all-metal 4x5 Graphic View camera. Experience and the enthusiasm of its reception have led to certain refinements in the form of the 4x5 Graphic View II of 1950.

In the more specialized industrial fields, the T-5 Factograph introduced in 1932, and since extensively improved, is unique in its recording of message register readings in the great telephone exchanges. Likewise, in the field of microfilming, the Graflex Photorecord has gone into all corners of the world and continues to gather new friends because of its portability and versatility on the job. Developed as a proven outgrowth of these microfilming cameras, the Graflex personnel Identification Units, introduced in 1941, played a most important part in the security programs of industry and the military during World War II and today is in continuing demand for military, commercial, industrial, and civilian uses.

The versatility of the 3¼x4¼ and 4x5 Pacemaker Speed Graphics

was notably increased in 1950 through new models which incorporate the new Grafluk Back. These new models accept the Graflex Roll Holder, using standard roll film, in addition to cut film, the Grafmatic Film Holder to enable the quick changing of sheet film, and the Graflarger, which makes of the camera an ideal enlarger merely by affixing it to the back of the camera.

Numerous accessories, such as Graflite Flash Units, Synchronizers and Solenoids, all used in flash photography, are recognized as outstanding in their fields.

The double sheet film holder, manufactured by Graflex, has become the standard of the field, not only because of the excellence of design, but because of precision in film registration, dimensional stability and lighttightness.

Additional detailed information on major Graflex products will be found in "Graphic Graflex Photography," a favorite reference book of photographers and one which is available in most libraries, camera stores and camera clubs throughout the country.

The extreme care with which all Graflex products are built is a recognized expression of desire on the part of the Members of the Graflex Organization for customer satisfaction. Graflex Members know full well that Graflex customers are essential to the success of the business, and contribute accordingly.

## *Users of Note*

**G**RAFLEX-MADE cameras have travelled the world over these many years in the company of explorers, hunters, and scientists to enable them to make a pictorial record of their exploits and achievements, whether they be in the frozen polar regions of the earth, the equatorial heat of the tropics, or in the rarified stratosphere many miles above the earth's surface.

Among such noted users of Graflex products are to be recounted Theodore Roosevelt and his expeditions to Africa and South America, Admiral Richard Byrd in his trips to the North Pole and the Antarctic, Dr. Richard L. Sutton in Southern Asia and the Arctic, Martin Johnson on his numerous visits to Africa and Samoa, and Colonel Albert W. Stevens in the stratosphere flights sponsored by the U. S. Army Air Corps and the National Geographic Society.

Innumerable outstanding photographers in the press, and in scientific, naturalist, pictorial, industrial, and commercial fields have selected Graflex-made products for their pictures.

Mention of many, but by no means all of them, may be found in the pages of "Graphic Graflex Photography."

## *Graflex through the Wars*

TRUE to the American heritage, Graflex growth and prosperity have been rooted in peace, but the full measure of its strength has been early offered and long remembered whenever the national security has been questioned. On each occasion, as Graflex productive capacity has been turned from civilian to military needs, the national cause has benefited directly from its program of research.

The Wright Brothers made their first flight in 1903. Almost concurrently, William F. Folmer created the first automatic aerial camera, then known as the Kite camera. Initially for peacetime use, this camera was specifically designed, in the absence of an aeroplane, to be supported by a kite, towed by a horseless carriage (automobile). A control string was yanked every time a picture was to be taken, after which the wind motor took over, winding the film and otherwise preparing the camera for the next exposure. So effective was its operation, that one of its pictures of Rochester, made in 1908, is even today an excellent example of aerial photography. The aerial cameras which followed, some of which are referred to herein, have had such an inestimable impact on national and world history, in war as well as peace, that full justice cannot be done the subject in this brief "Story of Graflex."

Naturally, with the involvement of the U. S. in World War I, the predecessors of Graflex became the immediate source of ground cameras. Because of their outstanding performance in and out of combat over the entire world, cameras made by Graflex and its forebears, improving with the years, have remained the standard of the armed services for more than a third of a century.

In the aerial field, gaining experience from the 1915, British-type-L camera (wooden construction, hand-operated, double-plate magazines), there were developed a number of aero cameras for the armed forces of the United States. These stressed simplicity and reliability of operation, built around the Graflex multiple aperture, focal plane shutter, in some models, interlocked with automatic film transport. With the rise of new

strategies calling for aerial mapping, Graflex again led in its design and delivery of the first automatic aerial mapping camera, the K-1. This used 9½" width film in rolls 75' long and accepted pre-focused lenses of 8¼", 12", and 20" in interchangeable cones. This K-1, forerunner of the most modern aerial cameras, had a special venturi tube to create a vacuum pressure and a wind motor for motive power, since planes at that time did not have batteries and generators.

It is interesting to note that since the special aerial cameras mentioned above were not widely enough distributed by our armed forces at the outset of our entry into World War I, the first American aerial photographers used large Graflex cameras and consequently made their own unique (although unauthorized) insignia showing the Graflex camera supported by two wings. This insignia is the cherished possession of that small but proud coterie of America's first aerial photographers.

During these years, as well as in the years to follow, Graflex also conducted special courses in camera servicing, so that these cameras could be kept in good working order wherever they went with our fighting men.

The Graflex personnel Identification Unit which has maintained the acceptance in plant security programs, which it achieved during the early part of World War II, was based on an Identification Outfit made during World War I. This unit used a 35mm film with a pre-focused lens, fixed illumination, and interlocking of mechanical functions, so that an unskilled operator could produce a clear likeness of the subject with his height and clock number recorded at the same time.

### ***Many Graflex Products Fought in World War II***

Many specialized products of a photographic and related nature were supplied by Graflex throughout World War II. A typical example of the result of Graflex co-operation within its own departments and with the military is shown in the history of the K-21 aircraft camera.

This new K-21 camera of 5x7 picture size, which is completely motorized, is provided with a 7" f/2.5 objective and interlocked through a system of complicated but never-failing controls for night operation synchronized with the illumination of dropping flash bombs.

In 1942 Graflex, co-operating with the General Electric Company's Engineering Laboratories for its electronic components, developed an accessory Grid Shutter specifically for the K-21, but adaptable to a much wider range of equipment. On the K-21, it allowed synchronization with high peak fast-burning flash bombs and was able to differentiate between their source of light and other flashes of illumination in tripping the camera shutter. In other words, when associated with this Graflex





Iwo Jima Flag Raising, by Joe Rosenthal  
Graflex Diamond-Award Winner and Pulitzer Prize Winner, 1945

Grid Shutter, the K-21 could be flown (ready for photocell release of an exposure) over ground fires and through the burst of antiaircraft flak—and not until the flash bomb released by the K-21's plane had reached its peak intensity did the actual exposure take place.

In the realization that Graflex was more than maintaining its delivery schedule for the service forces, late in 1942, the Air Forces requested the company's further co-operation in the quantity production of aircraft cameras such as the K-20, initially manufactured by others. Acceptance by Graflex of this new assignment in turn led to a similar request from the Navy for the production of K-25 aircraft cameras; and then for important assemblies of the K-24 in 1944 and finally the K-17 in 1945.

The contributions of Graflex personnel and facilities during World War II were by no means confined to the photographic field. Just as Graflex scientific and production know-how pioneered in cameras which permanently record the fleeting image of the radar screen, so also did Graflex accomplish its part in the production engineering and manufacture of critical portions of the radar equipment itself.

In addition to meeting all of its contractual obligations to the government, inclusive of delivery schedules and quality standards, Graflex efficiency of production and management effected savings and concurrent voluntary refunds of major proportions to the taxpayers. On the K-21 contract alone, this saving amounted to more than 25 per cent, or two million dollars. As a result of Graflex redesign and manufacturing economies, during the run of the contract for K-20 cameras, their cost to the government (and incidentally to the taxpayer) was reduced by more than 50 per cent.

### ***Photographic Training Programs Important War Contribution***

Also, during that period, Graflex assumed an important role in the special training of selected military personnel. It established, in Rochester, the U. S. Army Signal Corps—Graflex Photomechanical School, and conducted intensive training courses for successive detachments of selected personnel. Graflex created, compiled, and edited the complete textbook and curriculum and provided the instructors for all mechanical instruction and supervision. Graflex broadened the scope of this instruction through the Rochester Institute of Technology. Likewise, in Los Angeles, Graflex Western Division conducted a school for selected military personnel, who had the responsibility of giving guidance and instruction in the use, care, and maintenance of Graflex equipment.

Several members of the Graflex technical group made unusual con-

tributions as the result of extensive field operations both in Alaska under cold weather conditions and in California and Texas where aircraft cameras were operated under desert conditions.

These activities, coupled with enhanced production of Speed Graphic cameras used as standard equipment by all branches of the armed forces, resulted in the award to Graflex on October 17, 1942, of the Army and Navy E flag for outstanding service. This was less than one year after war had been declared. And thereafter throughout the war-production years, Graflex received four additional stars for the "E" flag.

The presentation of this flag was made in the Eastman Theatre, Rochester, New York, on November 10, 1942, on behalf of the Army and the Navy. Officers representing all branches of the services participated therein.

Notable among the tributes paid during the ceremony were the following by Colonel George W. Goddard, Chief of the Army Air Forces Photographic Laboratory, who said, "We worked together, Graflex and the Army, just as you have apparently always worked together in your own shop. The spirit of co-operation and of playing the game which I have known in this plant for more than a score of years is still the high mark of your character," and

Colonel Donald L. Hardy, Chief Aircraft Sections Supply and Maintenance Division, Army Air Forces, who said, "I have come to know that a Graflex promise is a word of honor. I have learned that your understanding of the word 'co-operation' means not to come halfway in a meeting of the minds, but to come all of the way when necessary, and I have learned that you consider no difficulty insurmountable."

Two hundred and thirteen Members comprised the Graflex Roll of Honor in World War II. They were variously engaged in the different services and seven of them made the supreme sacrifice. The greater number of these veterans are presently employed at Graflex.

The Members of the Graflex Organization were loyal supporters of the "E" Bond drives during the war and received with Graflex recognition of their efforts through the presentation of the War Bond flag.

World War II has been called a "photographic war." Graflex has reason for extreme pride in knowing that so many outstanding photographs of that conflict had been taken with Graflex-made equipment, including Rosenthal's immortal picture of the flag raising on Iwo Jima.

And, as this is written, Graflex has again dedicated its full and its best efforts to resolving the international emergency in which the whole world finds itself embroiled.

With the 4x5 Pacemaker Speed Graphic, today's standard for military

ground photography, Graflex has again stepped to the fore with the original design and production contract for a Combat camera utilizing 70mm film. With its interchangeable lenses, coupled combination range and view finders, with automatic parallax and focal length compensation, built-in synchronization, self-capping focal plane shutter and spring motor drive, this efficient handful of dust- and water-tight perfection is a long step from the Graflex combat camera "45" of World War II which had been developed almost overnight and was carried through the landing operations by the U. S. Marines.

Again to the front in the field of aircraft cameras, Graflex has just completed the development of the K-41 (bomb spotting and reconnaissance) camera for the Army Air Forces, incorporating therein an electronic brain which assures accurate image motion compensation after setting but two single controls, and has proven once more that ability to pioneer even as the ever-growing complication of military aerial reconnaissance has increased with the years.

And so it will be with the fulfillment of other military requirements such as in the manufacture of exacting Ordnance fire-control instruments in which Graflex is presently engaged.

Graflex can face the past with justifiable pride; its future with confidence born of experience. New assignments have been accepted; others of equal importance will inevitably follow.

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*"Each day in our life  
is a page in our history"*

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## *Graflex, a Real Home for 25 Years*

COINCIDENT with the observation by the company of its twenty-fifth anniversary on June 9, 1951, is the formation of the N. L. W. Club composed of all the Members of the Graflex Organization who have been with Graflex, Inc., all of its life.

Graflex and all of the Members whose names appear on this quarter-century page are proud of this record.

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WILLIAM G. SAFFRAN

ARTHUR TAYLOR

Louise E. Schwind came to Graflex on July 9, 1926. The Club is adopting Louise for the short time until she becomes a Member.

# *Graflex Service Records*

(continued)

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